Digital Competence Framework

Anusca Ferrari & Yves Punie

JRC-IPTS

Since 2005, evidence-based policy research on **ICT for Learning and Skilling**

**PAST projects**
- Learning 2.0
- Innovation & Creativity in E&T
- Future of Learning & Skilling
- ICT for Assessment of Key Competences

**CURRENT projects**
- Mapping Technologies for Learning (2012-2013)
- **Digital Competence Framework (2010-2012)**
- Teacher Networking (eTwinning – TELLNET)
- Mainstreaming “Creative Classrooms” (2011-2013)
- Open Educational Resources (2012-2014)

In collaboration with DG EAC, linked to other EC policies (CONNECT, ENTR, EMPL)
Educational transformation in a digital world

- Mainstreaming and Up-scaling ICT for innovating and modernizing Education and Training (E&T)

- New Skills and Competences in a digital society
Basic ICT Skills
E-skills
ECOMPETENCE FOR ICT USERS
Digital Competence
Digital Literacy
ICT Pratitioner Skills
Use of IST underpinned by basic skills in ICT
ECOMPETENCE
EBusiness Skills
ELITERACY
ICT USER SKILLS
Basic Computer Skills
ECOMPETENCE FOR END USERS
Digital Competence Study (AA with DG EAC, 2010-2012)

Aim:
- Identify key components of Digital Competence (DC) in terms of the knowledge, skills and attitudes needed to be digitally competent
- Develop DC descriptors and a conceptual framework/guidelines at EU level
- Propose a roadmap for follow-up actions

Why:
- Relevant for Europe 2020 Flagships: DAE, YoM, NS&J, Innovation Union
- Transversal basic competence important for all
- Many initiatives but lack of complete, common guidelines at European level

Policy:
- Digital Agenda Scoreboard & Action Nr. 58 on recognition of Digital Competence

What:
- Meta-framework that current initiatives can refer to (Cf. language levels)
- Tool for the implementation of new digital competence initiatives
Digital competence involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication. It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet.

Policy concepts: eSkills (DG ENTR)

- **ICT user skills** represent the capabilities required for the effective application of ICT systems and devices by the individual. ICT users apply systems as tools in support of their own work. User skills cover the use of common software tools and of specialised tools supporting business functions within industry. At the general level, they cover "digital literacy".

- **ICT practitioner skills** are the capabilities required for researching, developing, designing, strategic planning, managing, producing, consulting, marketing, selling, integrating, installing, administering, maintaining, supporting and servicing ICT systems.

- **e-Business skills** correspond to the capabilities needed to exploit opportunities provided by ICT, notably the Internet; to ensure more efficient and effective performance of different types of organisations; to explore possibilities for new ways of conducting business/administrative and organisational processes; and/or to establish new businesses.

European e-Skills Forum, adopted also in eSkills Communication (2007)
3 phases of digital literacy

1\textsuperscript{st} (60s - 80s)

- **Mastery phase**
  - Professionals only
  - Programming languages
  - eSkills

2\textsuperscript{nd} (mid 80s - 90s)

- **Application phase**
  - Educated
  - Graphic user interfaces
  - Mass certification

3\textsuperscript{rd} (90s - today)

- **Reflective phase**
  - Digital inclusion
  - Natural user interfaces
  - Critical/transversal skills

**Need to go beyond the second phase**

Applications -> moving target
Conceptual mapping: Completed
Case studies analysis: Completed
Online Consultation: Completed
Experts’ workshop: Completed

First proposal: Completed

Stakeholders’ Consultation: ongoing

Validated proposal: December 2012
Conceptual mapping
- 69 references

Case studies analysis
- 100+ (15 in-depth)

Online Consultation
- 95 experts

Experts’ workshop
- 17 + 9 EC

First proposal

Stakeholders’ Consultation
- 35 consultants

Validated proposal
Digital Competence framework structure

- Dimension 1: Competence areas (5)
- Dimension 2: Competences (18)
- Dimension 3: Proficiency levels (3)
- Dimension 4: Examples of Knowledge, Skills and Attitudes
- Dimension 5: Applicability to different purposes (6)

Source: Elaborated by IPTS, based on eCompetence framework for ICT professionals: [http://www.ecompetences.eu/](http://www.ecompetences.eu/)
Dimension 1: Competence Areas

1. Information
2. Communication
3. Content-creation
4. Safety
5. Problem-solving
## Draft Framework

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<th>Dimension 1</th>
<th>Dimension 2 Competence areas</th>
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<td>1.1 Information search and feeds</td>
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<td>1.2 Information evaluation</td>
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<td>1.3 Information storage and retrieval</td>
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<td>1.4 Copyright and Licences</td>
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<tr>
<td><strong>2. Communication</strong></td>
<td>2.1 Digital communication</td>
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<td></td>
<td>2.2 Sharing of content, knowledge and resources</td>
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<td>2.3 Online participation</td>
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<td>2.4 Digital collaboration</td>
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<td>2.5 Digital Etiquette</td>
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<td><strong>3. Content-creation</strong></td>
<td>3.1 Content production</td>
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<td></td>
<td>3.2 Integration and re-elaboration of previous knowledge and content</td>
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<td></td>
<td>3.3 Creation of digital and multimedia outputs and programming</td>
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<tr>
<td><strong>4. Safety</strong></td>
<td>4.1 Personal data protection, digital Identity and privacy</td>
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<tr>
<td></td>
<td>4.2 Security and safety measures</td>
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<td></td>
<td>4.3 Sustainability</td>
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<tr>
<td><strong>5. Problem-solving</strong></td>
<td>5.1 Identification of appropriate technological responses</td>
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<td></td>
<td>5.2 Update of own and other’s digital competence</td>
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<td>5.3 Solving technical problems</td>
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## 1.1 Information search and feeds

**To access and search for online information, to find relevant information, to select resources effectively, to create and use information strategies**

<table>
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<tr>
<th>Dimension 3</th>
<th>A - Foundation</th>
<th>B - Intermediate</th>
<th>C - Advanced</th>
</tr>
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<tbody>
<tr>
<td><strong>Proficiency levels</strong></td>
<td>I can search for information online. I know that not all information is displayed through search engines.</td>
<td>I am developing strategies to search for information online from different devices (computer, smartphone) and can select the appropriate information I find.</td>
<td>I can use a wide range of strategies when searching for information. I can filter the information I receive.</td>
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**Knowledge examples**
- Understands how information is generated, managed and made available
- Can evaluate own information needs
- Is aware of different search engines
- Understands which search engines or databases best answer to his/her own information needs
- Understands how information can be found in different devices and media
- Understands the reliability of different sources
- Understands how search engines classify information
- Understands how feeds mechanism works

**Skills examples**
- Adjusts searches according to specific needs and to results
- Can follow information presented in hyper-linked and non-linear form
- Can use filters and agents
- Can predetermine information searches and selects controlled vocabulary specific to the search tool
- Has strategic information skills for goal oriented activities
- Uses various classification schemes to locate resources and information
- Can modify information searches according to how algorithms are built
- Is able to adapt search strategies to a specific search engine, application or device

**Attitude examples**
- Has a proactive attitude towards looking for information
- Values the positive aspects of technologies for information retrieval
- Is motivated to seek information for different aspects in his/her life
- Is curious about information systems and their functioning
- Is aware of the limitation of searches through technological means

<table>
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<tbody>
<tr>
<td><strong>Learning</strong></td>
<td>I can use a search engine to find details about a specific type of heat energy</td>
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<tr>
<td><strong>Employment</strong></td>
<td>I can find details of flights using a common search engine</td>
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<tr>
<td><strong>A - Foundation</strong></td>
<td><strong>B - Intermediate</strong></td>
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<td><strong>Information</strong></td>
<td>I can search for information online. I know how to save or store files and content (e.g. text, pictures, music, videos, and web pages). I know that not all online information can be trusted. I know that some of the content I find can be covered by copyright. I know how to go back to the content I saved.</td>
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<tr>
<td><strong>Communication</strong></td>
<td>I can communicate with others using at least one device, tool, or application (e.g. mobile phone, VoIP, chat, email). I understand how technologies can be used to cooperate with others and I know how to interact with others in line with basic principles. I can use at least one online service (e.g. online banking, e-government, buying, and selling online, online health services).</td>
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<tr>
<td><strong>Content-creation</strong></td>
<td>I can produce simple digital content in at least one format (e.g. text, tables, images, audio, etc.) and in at least one environment (e.g. computer, tablet, smartphone). I can make basic changes to the content that others have produced.</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>I can take basic actions to protect my online privacy (e.g. sharing only certain type of information with others). I can use basic steps to protect my devices (for instance using anti-viruses, passwords, etc.). I know how to protect myself from cyberbullying.</td>
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<td><strong>Problem-solving</strong></td>
<td>I know that several technologies are available. I can ask for support and assistance when technologies do not work or when using a new device, programme or application.</td>
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DC proposal: two outputs

1. Digital Competence framework
   - Certification schemes
   - Curricula development
   - In-service training
   - Digital Society

2. Self-assessment grid
   - Self-assessment tool
   - CV - Europass
   - Communication tool
   - Digital Society
Possible follow-up (2013-2015)

- Roadmap for implementation and revision
- Profiling – contextualizing
- Contribute to DAE Action n. 58: Develop a framework to recognise ICT skills (online assessment tool as supplement to Europass CV (as for languages) (end 2012)
- Contribute to DAE Action n. 62: propose by 2013 EU-wide Indicators on Digital Competences
- Future survey for measuring digital competence levels in society
Thank you for your attention – Questions?

Yves.Punie@ec.europa.eu

http://is.jrc.ec.europa.eu/pages/EAP/DIGCOMP.html